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ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,620	KOPMEINERS ET AL.	
	Examiner	Art Unit	
	CANDAL ELPENORD	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _April 16, 2008_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-29_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-29_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _22 December 2006_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _22 December 2005_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1-11, 13-15, 16-25** are rejected under 35 U.S.C. 102(e) as being anticipated by Perahia et al (US 7,352,688 B1).

Regarding claims 1,**16**, Perahia ‘688 discloses a method for transmitting data (“method for transmitting OFDM signal”, col. 2, lines 15-25, lines 41-50) in a multiple antenna communication system (fig. 1, Wireless Communication System comprising of antenna elements, col. 4, lines 1-21, fig. 3, MIMO transmitter system 300, col. 5, lines 6-9) having N transmit antennas (noted: transmitting a signal via a first OFDM antenna element, and via a second antenna element, col. 2, lines 41-50, see fig. 3, OFDM antenna elements 106H and 106V, col. 4, lines 11-21), said method comprising the step of: transmitting a legacy preamble (noted: transmitting of preamble containing long training symbols according to IEEE 802.11, col. 5, lines 28-36,) having at least one long

training symbol (fig. 5 to fig. 6,1st Long Training symbol 506, col. 6, lines 29-45) and at least one additional long training symbol (fig. 5 to fig. 6, 2nd Long Training Symbol 506, col. 6, lines 29-45) on each of said N transmit antennas (noted: transmitting a signal via a first OFDM antenna element, and via a second antenna element, col. 2, lines 41-50, see fig. 3, OFDM antenna elements 106H and 106V, col. 4, lines 11-21), wherein a sequence of each of said long training symbols (fig. 5 to fig. 6, 1st and 2nd Long Training Symbols 506, col. 6, lines 29-45, fig. 6, see Odd and Even Long Training Symbols 604, 606) on each of said N transmit antennas are orthogonal (noted: transmission of the long training symbols by two transmitting antenna elements using non-overlapping subsets of subcarriers, col. 8, lines 48-60).

Regarding claims 2, **17**, Perahia ‘688 discloses the method, wherein said legacy preamble further comprises at least one short training symbol (fig. 1 to fig. 2, see Short Training Symbols 502 of the preamble, col. 6, lines 33-37).

Regarding claims 3,**18**, Perahia ‘688 discloses the method, wherein said legacy preamble further comprises at least one SIGNAL field (noted: fig. 5 to fig. 6, SGNAL field 512 that designate modulation type, col. 6, lines 53-57).

Regarding claims 4, **19**, Perahia ‘688 discloses the method, wherein said legacy preamble is an 802.11a/g preamble (noted: IEEE 802.11a standard or use of preamble, col. 5, lines 28-36, col. 6, lines 48-53).

Regarding claims 5, **20**, Perahia ‘688 discloses the method, wherein each of said long training symbols are time orthogonal (noted: transmitting of long training symbols by tow antenna elements using non-overlapping subsets of subccarriers, col. 8, lines 48-60).

Regarding claims 6, **21**, Perahia ‘688 discloses the method, wherein each of said long training symbols (fig. 5 to fig. 6, see 1st and 2nd Long Training Symbols 506) are time orthogonal by introducing a phase shift (noted: for each successive OFDM symbol, an IFFT is applied to complex subcarriers in order to obtain the time domain, col. 3, lines 54-65, fig. 2, Block 205, shifts the frequency and the phase, col. 4, lines 49-51) to each of said long training symbols (fig. 5 to fig. 6, see 1st and 2nd Long Training Symbols 506) relative to one another (noted: for each successive OFDM symbol, an IFFT is applied to complex subcarriers in order to obtain the time domain, col. 3, lines 54-65, fig. 2, Block 205, shifts the frequency and the phase, col. 4, lines 49-51).

Regarding claims 7, **22**, Perahia ‘688 discloses the method, wherein said phase shift (noted: for each successive OFDM symbol, an IFFT is applied to complex subcarriers in order to obtain the time domain, col. 3, lines 54-65, fig. 2, Block 205, shifts the frequency and the phase, col. 4, lines 49-52) is introduced to each of said long training symbols (fig. 5 to fig. 6, see 1st and 2nd Long Training Symbols 506) using a complex rotation (noted: phase rotation through tone measurements, col. 7, lines 64-65).

Regarding claims 8, **23**, Perahia '688 discloses the method ("method for transmitting OFDM signal", col. 2, lines 15-25, lines 41-50), wherein N is two (and wherein said transmitting step further comprises the step of transmitting a legacy preamble having at least one long training symbol and one additional long training symbol (fig. 5 to fig. 6, see 1st and 2nd Long Training Symbols 506) on each of said two transmit antennas (fig. 5, Antenna Element 1 and Antenna Element 2, col. 6, lines 29-32) wherein one of said transmit antennas transmits one (noted: transmitting of first OFDM training signal/symbol on first antenna, col. 2, lines 41-50) of said long training symbols (fig. 5 to fig. 6, see 1st and 2nd Long Training Symbols 506) with a reversed polarity (noted: generation of antenna polarizations, fig. 3, col. 5, lines 6-15).

Regarding claims 9, **24**, Perahia '688 discloses the method, whereby a lower order receiver (fig. 4, Receiver, processing the received long training symbol, col. 9, lines 54-67) can interpret said transmitted data (fig. 4, Receiver, processing the received long training symbol, col. 9, lines 54-67, col. 5, lines 45 to col. 6, lines 21).

Regarding claims 10, **25** Perahia '688 discloses the method, further comprising the step of transmitting a field (fig. 5 to fig. 6, see, Element 1, 2 identifying the distinct antennas 1,2) indicating said number N of transmit antennas (Noted: transmitted long training symbols by antenna elements 1, 2, col. 6, lines 29-32, col. 8, lines 48-60).

Regarding claim 11, Perahia '688 discloses the method, further comprising the step of transmitting a field identifying an employed coding scheme (noted: the signal

filed 512 indicating the modulation type , col. 6, lines 53-57, QAM modulation, col. 5, lines 16-27).

Regarding claim 13, Perahia '688 discloses the method, further comprising the step of transmitting a field identifying a long training symbol format (fig. 6, see Odd and Even transmitted Long Training Symbol 604, 606, col. 8, lines 48-60).

Regarding claim 14, Perahia '688 discloses the method, wherein said legacy preamble has a shorter guard interval (fig. 5 to fig. 6, see Guard Interval 508, col. 6, lines 38-54).

Regarding claim 15, Perahia '688 discloses the method, wherein said legacy preamble (Noted: preamble with long training symbols, col. 5, lines 28-36) has a long training field containing only one long training symbol (fig. 5 to fig. 6, see long training symbol field 506, 604, 606).

4. **Claims 1-15** are rejected under 35 U.S.C. 102(e) as being anticipated by Gardner et al (US 2005/0233709 A1).

Regarding claims 1, **16**, Gardner '709 discloses a method for transmitting data (Noted: transmission of OFDM signal with respect to a preamble, paragraphs 0022-0023) in a multiple antenna communication system having N transmit antennas (fig. 3, MIMO Antennas 102, 104, fig. 8, see Transmitter 0, and Transmitter 1,paragraphs 0056, 0022), said method comprising the step of: transmitting a legacy preamble (noted: transmission of a preamble, paragraphs 0021-0023) having at least one long training

symbol (Noted: transmission of long training symbol as referenced by fig. 4, L2 , L3, and L4, paragraphs 0034-0038) and at least one additional long training symbol (fig. 4 in combination with fig. 8, Long Training Symbol L2 followed by Long Training Symbol L3 and L4 respectively) on each of said N transmit antennas (fig. 3, MIMO Antennas 102, 104, fig. 8, see Transmitter 0, and Transmitter 1,paragraphs 0056, 0022), wherein a sequence of each of said long training symbols on each of said N transmit antennas (fig. 3, MIMO Antennas 102, 104, fig. 8, see Transmitter 0, and Transmitter 1,paragraphs 0056, 0022) are orthogonal (noted: one transmitter transmits with a odd set of subcarriers and the other transmitter transmits with the even subcariers as reference by fig. 4, paragraphs 0035-0040).

Regarding claims 2,**17**, Gardner '709 discloses the method (Noted: transmission of OFDM signal with respect to a preamble, paragraphs 0022-0023), wherein said legacy preamble further comprises at least one short training symbol (fig. 1, and fig. 8, Short Training Symbol, paragraphs 0005, 0034, 0056).

Regarding claims 3, **18**, Gardner '709 discloses the method of claim 1, wherein said legacy preamble further comprises at least one SIGNAL field (Noted: Signal according to IEEE 802.11a, paragraph 0078, 0005, fig. 1, Signal Filed, paragraph 0059)

Regarding claims 4, **19**, Gardner '709 discloses the method, wherein said legacy preamble is an 802.11a/g preamble (noted: transmitting of a preamble using

legacy device as referenced by IEEE 802.111 and IEEE 802.11g, paragraphs 0027-0028, 0062).

Regarding claim 5, **20**, Gardner '709 discloses the method, wherein each of said long training symbols are time orthogonal (noted: transmitting of OFDM long training signals using IFFT/time varying signal, paragraph 0037, 0044).

Regarding claims 6,**21**, Gardner '709 discloses the method, wherein each of said long training symbols are time orthogonal by introducing a phase shift to each of said long training symbols relative to one another (noted: generating an output sequence comprising of complex values associated with a phase shifts, paragraph 0044, 0070).

Regarding claims 7, **22**, Gardner '709 discloses the method, wherein said phase shift is introduced to each of said long training symbols using a complex rotation (noted: generating an output sequence comprising of complex values associated with a phase shifts, paragraph 0044, 0069).

Regarding claims 8, **23**, Gardner '709 discloses the method, wherein N is two (noted: method fro transmitting where two or more transmitting antennas may be used, paragraph 0022, 0072, 0077, fig. 3 to fig. 4) and wherein said transmitting step further comprises the step of transmitting a legacy preamble having at least one long training symbol(Noted: transmission of long training symbol as referenced by fig. 4, L2 , L3, and

L4, paragraphs 0034-0038) and one additional long training symbol (fig. 4 in combination with fig. 8, Long Training Symbol L2 followed by Long Training Symbol L3 and L4 respectively) on each of said two transmit antennas (fig. 3, MIMO Antennas 102, 104, fig. 8, see Transmitter 0, and Transmitter 1,paragraphs 0056, 0022), wherein one of said transmit antennas transmits one of said long training symbols with a reversed polarity (Noted: transmission of OFDM preamble whereby one transmitter transmits with even set of subcarriers and the other transmitter transmits with odd set of subcarriers, paragraphs 0037-0038, fig. 3, 4, 8).

Regarding claims 9, **24**, Gardner ‘709 discloses the method, whereby a lower order receiver (fig, 3 , Legacy Receiver 102, 104, receiving OFDM preamble, paragraphs 0021-0023) can interpret said transmitted data (noted: a receiver detecting the repetitive short and long training symbols, paragraphs 0025, 0034, 0042-0044, 00555, 0059).

Regarding claims 10, **25**, Gardner ‘709 discloses the method, further comprising the step of transmitting a field indicating said number N of transmit antennas (fig. 3 to fig. 4, fig. 8, see field identifying each OFDM transmitter as Transmitter 0, Transmitter 1, paragraphs 0022-0024, 0056).

Regarding claim 11, Gardner ‘709 discloses the method of claim 1, further comprising the step of transmitting a field identifying an employed coding scheme (noted: OFDM transmitter suing plurality of channels, transmits a signal filed that indicates the coding rate, paragraph 0058-0059)..

Regarding claim 12, Gardner '709 discloses the method noted: method for providing coexistence between the extended devices and the legacy IEEE 802.11a and IEEE 802.11g, paragraph 0062, further comprising the step of transmitting a field identifying channel bonding options (noted: transmission of signal using combination of extensions, paragraphs 0026-0034, 0048-0049).

Regarding claim 13, Gardner '709 discloses the method, further comprising the step of transmitting a field identifying a long training symbol format (noted: transmission of MIMO signal in the form of long training symbol using out-band subcarriers, paragraphs 0050-0053).

Regarding claim 14, Gardner '709 discloses the method, wherein said legacy preamble has a shorter guard interval (fig. 1, fig. 3 to fig. 4, fig. 8, see, Guard Interval).

Regarding claim 15, Gardner '709 discloses the method, wherein said legacy preamble has a long training field containing only one long training symbol (fig. 3 to fig. 4, see Long Training Symbols as referenced by L2, L3 and L4, fig. 8, see Long Training Symbol transmitted by Transmitter 0, and Transmitter 1 as referenced by I1, I0 in the repeated training field respectively, paragraphs 0056, 0058).

Regarding claims 26, **29**, Gardner '709 discloses a method for receiving data on at least one receive antenna (fig. 3, Legacy Receiving Antenna 102, 104, paragraphs 0022-0023) transmitted by a transmitter having N transmit antennas (fig. 3, fig. 8,

Transmitting Antennas 102, 104, paragraphs 022-0023, 0030-0031, 0056, “MIMO transmitter comprising of two or more antennas”, paragraph 0070, 0072)) in a multiple antenna communication system (“MIMO transmitter comprising of two or more antennas”, paragraph 0070, 0072, fig. 3, to fig. 4, fig. 8), said method comprising the steps of: receiving a legacy preamble (fig. 4, fig. 8, see preamble being transmitted and received, paragraphs 0021-0022, 0024, 0035) having at least one long training symbol (fig. 4 in combination with fig. 8, Long Training Symbol L2 followed by Long Training Symbol L3 and L4 respectively, noted: the legacy receiver receiving the long training symbol and interpreting the preamble, paragraphs 0025, 0034, 0044) and an indication of a duration of a transmission of said data (noted: transmitting of OFDM preamble with 3.2 microsecond duration as referenced by fig. 8, noted: legacy receiver defers of incoming packet signals for a time”, paragraph 0025, “the Signal filed provides the receiver with information about the length of the packet and how long to defer”, paragraph 0055, 0059), and at least one additional long training symbol (fig. 4 in combination with fig. 8, Long Training Symbol L2 followed by Long Training Symbol L3 and L4 respectively) on each of said N transmit antennas (fig. 3, MIMO Antennas 102, 104, fig. 8, see Transmitter 0, and Transmitter 1,paragraphs 0056, 0022), wherein a sequence of each of said long training symbols on each of said N transmit antennas (fig. 3, MIMO Antennas 102, 104, fig. 8, see Transmitter 0, and Transmitter 1,paragraphs 0056, 0022) are orthogonal (noted: one transmitter transmits with a odd set of subcarriers and the other transmitter transmits with the even subcarriers as reference by fig. 4, paragraphs 0035-0040), said legacy preamble transmitted such that

said indication of a duration can be interpreted by a lower order receiver (fig. 3, Receiving Legacy Antenna, paragraphs 0022, 0025, noted: receiver detecting the received long training symbols, paragraph 0034, “the Signal filed provides the receiver with information about the length of the packet and how long to defer”, paragraph 0055, fig. 1, fig. 4, and fig. 8); and deferring for said indicated duration (noted: “legacy receiver defers processing of incoming packet signals for a time”, paragraph 0025, 0059).

Regarding claim 27, Gardner ‘709 discloses the method, wherein said method is performed by a SISO receiver (noted: the receiver decoding the long training symbols, paragraph 0077, 0071, "legacy SISO", paragraphs 0025-0029).

Regarding claim 28, Gardner ‘709 discloses the method, wherein said indication is transmitted in a SIGNAL field (noted: the receiver decoding the signal filed which provides it with information about how long to defer, paragraph 0055, 0078) that complies with the 802.11 a/g standards (noted: coexistence between legacy devices that conform to IEEE 802.11a and 802.11g, paragraphs 0062, 0068).

Regarding claim 29, please see the Examiner comments with respect to claim 26 as discussed above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Perahia et al (US 7,352,688 B1) in view of Gardner et al (US 2005/0233709 A1).

Regarding claim 12, Perahia ‘688 discloses all the claimed limitation with the exception of being silent with respect to claimed features: the method, further comprising the step of transmitting a field identifying channel bonding options

However, Gardner '709 from the same field of endeavor discloses the above claimed features: the method (noted: method for providing coexistence between the extended devices and the legacy IEEE 802.11a and IEEE 802.11g, paragraph 0062), further comprising the step of transmitting a field identifying channel bonding options (noted: transmission of signal using combination of extensions, paragraphs 0026-0034, 0048-0049).

In view of the above, having the method for transmitting signal/training preamble of Perahia ‘688, and the teaching features of Gardner '709, it would have been obvious to one or ordinary skill in the art at the time the invention was made to modify the features of Perahia ‘688 by using features as taught by Gardner '709 in order to provide compatibility using legacy devices as suggested in paragraphs 0009-0010 for motivation.

9. **Claims 26-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Perahia et al (US 7,352,688 B1) in view of Gardner et al (US 2005/0233709 A1).

Regarding claims 26, **29**, Perahia ‘688 discloses a method for receiving data on at least one receive antenna (Noted: “method for receiving a signal via a first antenna element", col. 2, lines 59-63, fig. 4, see, Receiver in Operation, col. 5, lines 45 to col. 6, lines 21col. 9, lines 54-67) transmitted by a transmitter having N transmit antennas (noted: transmitting a signal via a first OFDM antenna element, and via a second antenna element, col. 2, lines 41-50, see fig. 3, OFDM antenna elements 106H and 106V, col. 4, lines 11-21) in a multiple antenna communication system (fig. 1,

Wireless Communication System comprising of two antenna elements, col. 4, lines 1-21, fig. 3, MIMO transmitter system 300, col. 5, lines 6-9), said method (Noted: “method for receiving a signal via a first antenna element", col. 2, lines 59-63, fig. 4, see, Receiver in operation, col. 5, lines 45 to col. 6, lines 21, col. 9, lines 54-67) comprising the steps of: receiving a legacy preamble having at least one long training symbol (noted: the receiver, receiving a first long training symbol, col. 6, lines 7-21) and an indication of a duration of a transmission of said data, and at least one additional long training symbol on each of said N transmit antennas (noted: transmitting a signal via a first OFDM antenna element, and via a second antenna element, col. 2, lines 41-50, see fig. 3, OFDM antenna elements 106H and 106V, col. 4, lines 11-21), wherein a sequence of each of said long training symbols (fig. 5 to fig. 6, see 1st and 2nd Long Training Symbols 506) on each of said N transmit antennas (noted: transmitting a signal via a first OFDM antenna element, and via a second antenna element, col. 2, lines 41-50, see fig. 3, OFDM antenna elements 106H and 106V, col. 4, lines 11-21) are orthogonal (noted: transmission of the long training symbols by two transmitting antenna elements using non-overlapping subsets of subcarriers, col. 8, lines 48-60, receiving the OFDM signal using non-overlapping first and second set of subcarriers, col. 2, lines 51-63), said legacy preamble transmitted such that said indication of a duration can be interpreted by a lower order receiver; and deferring for said indicated duration.

Regarding claim 27, Perahia ‘688 discloses the method (Noted: “method for receiving a signal via a first antenna element", col. 2, lines 59-63, fig. 4, see, Receiver

in Operation, col. 5, lines 45 to col. 6, lines 21col. 9, lines 54-67), wherein said method is performed by a SISO receiver (fig. 4, SISO receiver, col. 9, lines 54-67).

Perahia '688 discloses all then claimed limitation with the exception of being silent with respect to claimed features:

Regarding claims 26, **29**, and an indication of a duration of a transmission of said data; said legacy preamble transmitted such that said indication of a duration can be interpreted by a lower order receiver; and deferring for said indicated duration.

Regarding claim 28, wherein said indication is transmitted in a SIGNAL field that complies with the 802.11 a/g standards.

However, Gardner '709 from the same field of endeavor discloses the above claimed features:

Regarding claims 26, **29**, and an indication of a duration of a transmission of said data (noted: legacy receiver defers of incoming packet signals for a time", paragraph 0025, "the Signal filed provides the receiver with information about the length of the packet and how long to defer", paragraph 0055, 0059); said legacy preamble transmitted such that said indication of a duration can be interpreted by a lower order receiver (fig. 3, Receiving Antenna, paragraph 0022, noted: receiver detecting the received long training symbols, paragraph 0034, "the Signal filed provides the receiver with information about the length of the packet and how long to defer", paragraph 0055, fig. 1, fig. 4, and fig. 8); and deferring for said indicated duration (noted: "legacy receiver defers processing of incoming packet signals for a time", paragraph 0025).

Regarding claim 28, wherein said indication is transmitted in a SIGNAL field (Noted: signal field with a four microseconds duration, paragraph 0005, “the Signal filed provides the receiver with information about the length of the packet and how long to defer”, paragraph 0055) that complies with the 802.11 a/g standards (noted: legacy wireless device that is compatible with IEEE 802.11a and 802.11g, paragraphs 0027-0028).

In view of the above, having the method for transmitting signal/training preamble of Perahia ‘688, and the teaching features of Gardner '709, it would have been obvious to one or ordinary skill in the art at the time the invention was made to modify the features of Perahia ‘688 by using features as taught by Gardner '709 in order to provide compatibility using legacy devices as suggested in paragraphs 0009-0010 for motivation.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Crawford et al (US 2003/0002471 A1), Ma et al (US 2003/0072255 A1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CANDAL ELPENORD whose telephone number is (571)270-3123. The examiner can normally be reached on Monday through Friday 7:30AM to 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Bin Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Candal Elpenord/

Examiner, Art Unit 2616

/Kwang B. Yao/
Supervisory Patent Examiner, Art Unit 2616